REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
(01-11-2013)	FINAL	

4. TITLE AND SUBTITLE

Mutual Interest: Engaging Vietnam on Oil Spill Prevention and Response

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

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5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Joint Military Operations Department
Naval War College
686 Cushing Road
Newport, RI 02841-1207

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Distribution Statement A: Approved for public release; Distribution is unlimited.
Reference: DOD Directive 5230.24

13. SUPPLEMENTARY NOTES A paper submitted to the Naval War College faculty in partial satisfaction of the requirements of the Joint Military Operations Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.

14. ABSTRACT

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15. SUBJECT TERMS
Vietnam, Offshore oil and natural gas, South China Sea, Petrovietnam.

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Chairman, JMO Dept
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED		16	19b. TELEPHONE NUMBER *(include area code)* 401-841-3556

Standard Form 298 (Rev. 8-98)

NAVAL WAR COLLEGE
Newport, R.I.

MUTUAL INTEREST: ENGAGING VIETNAM ON OIL SPILL PREVENTION AND RESPONSE

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

1 November 2013
(Date of submission of paper)

ABSTRACT

Vietnam's future economic growth will require increased access to oil and natural gas in the South China Sea. Vietnam has partnered with foreign oil companies to increase production and limit Chinese intervention. This strategy, coupled with regional tension, increases the risk of an industrial accident and oil spill. An oil spill would impact the regional economy and increase tension in the region. The United States should engage Vietnam on oil spill prevention and response, to reduce the risk of an industrial accident and promote regional stability. Developing a solution, in the sensitive area of offshore oil and natural gas production, reduces tension and promotes stability in the South China Sea.

The United States and Socialist Republic of Vietnam have a mutual interest in sustaining Vietnam's economic growth, developing natural resources, and protecting the environment. Yet with mounting regional tension over territorial claims in the South China Sea, and increased oil and natural gas exploration, Vietnam's risk of an environmental industrial disaster grows. An industrial accident like the Deepwater Horizon (DH) incident in the Gulf of Mexico would have a crippling effect on the Vietnamese economy and impact regional stability.[1]

Based on the situation in the South China Sea, a growing diplomatic and economic relationship between the U. S. and Vietnam, and the 2011 Memorandum of Understanding on Advancing Bilateral Defense Cooperation, United States Pacific Area Combatant Commander (USPACOM) should engage Vietnam on disaster response, specifically focusing on oil spill prevention and response, to promote regional stability and reinforce US policy. The US lessons learned from DH are a starting point for engagement. Working together to prevent oil spills and build response capability reinforces US neutrality in the South China Sea in the sensitive area of oil and natural gas exploration. This transparent approach supports Vietnam, decreases tension, and promotes stability in the region, by supporting national and multi-national response mechanisms.

Background- Economic Growth Brings Increased Demand for Energy

Several significant events in Vietnam's recent history changed the direction of the nation's economy, increased interaction with the global community, and resulted in an increased demand for energy. In 1986, Vietnam moved away from a centralized, planned economy to a market based system. These reforms, referred to as *Doi Moi,* were the beginning of rapid economic growth. The relationship with the United States continued to evolve. Since the end of

[1] Thomas C. Schelling, *Thinking Through The Energy Problem* (New York: Committee on Economic Development, 1979).

hostilities in 1975, several key economic and diplomatic benchmarks have led to increased openness between the two countries. President Clinton's ending of the trade embargo against Vietnam shifted the relationship's focus from post-war issues to future economic cooperation.[2] Normal trade relations (NTR) were established in 2001, and both countries are pursuing a multi-lateral Trans-Pacific Partnership (TPP) free trade agreement. Vietnam joined the World Trade Organization in 2007 and global trade relationships have continued to grow. As a result, the nation's Gross Domestic Product (GDP) grew significantly but stalled over the last several years. Currently, Vietnam is working to raise per-capita income, recover from an economic slowdown, counter inflation and manage future development.[3]

Future development and access to resources for energy are a common theme in Southeast Asia. Energy demand is expected to increase by over 80 percent by 2035 for ASEAN nations alone.[4] Vietnam's future energy goals include doubling their energy production from 2020 to 2030 using nuclear power, renewable energy, increasing imports, and pursuing offshore natural gas.[5] China is not a member of ASEAN, and will require twice as much energy as the US by 2040.[6] Substantial future energy demands increase the competition for resources and elevate the risk of conflict in the South China Sea. Offshore oil and natural gas exploration is a sensitive

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[2] Mark E. Manyin, *U. S.- Vietnam Relations in 2013: Current Issues and Implications for U. S. Policy*, (Washington, DC: Congressional Research Service, 2013), 4.
[3] Ibid., 5.
[4] International Energy Agency, *South East Asia Energy Outlook: World Energy Outlook Special Report*, September 2013, http://www.iea.org/publications/freepublications/publication/SoutheastAsiaEnergyOutlook_WEO2013SpecialReport.pdf. 11.
[5] Ibid., 33.
[6] U. S. Energy Information Administration, *International Energy Outlook 2013*, July 2013, accessed 31 Oct, 2013. http://www.eia.gov/forecasts/ieo/pdf/0484(2013).pdf10.

issue between Vietnam and China because of the potential energy reserves in the disputed areas of the South China Sea.

Energy Exploration Adds to Regional Instability

Access to potential oil and natural gas reserves, and efforts to survey the disputed area, have increased tension in the region and lead to multiple maritime incidents. Oil and natural gas reserve estimates for the South China Sea vary widely depending on the source. The energy consultant firm Wood Mackenzie estimates that there are 2.5 billion barrels (BBL) of oil equivalent in the South China Sea, while the EIA estimates that there are 11 BBL of oil, and 190 trillion cubic feet (TCF) of natural gas reserves.[7] China's estimates are much higher. In 2012, China claimed there were 125 BBL of oil, and 500 TCF of natural gas in the South China Sea.[8] Estimates of oil and natural gas in the disputed areas are significantly less than areas close to the coast. The United States Geological Survey (USGS) estimates there could be 2.5 BBL of oil, and 25.5 TCF of gas in undiscovered reserves in the disputed areas.[9] Surveying the sea bed of the South China Sea has become a source of conflict and added to regional instability. In March 2005, China initiated a Joint Maritime Seismic Understanding (JMSU) with the Philippines, and later Vietnam, to jointly survey an area of the South China Sea.[10] This agreement broke down and since then, China has intervened in the seismic exploration efforts of both countries.[11] The

[7] U. S. Energy Information Administration, "South China Sea," February 2013, accessed 31 October 2013, http://www.eia.gov/countries/regions-topics.cfm?fips=SCS.
[8] Ibid.
[9] Ibid.
[10] Ernest Bower, "The JMSU: A Tale of Bilateralism and Secrecy in the South China Sea," *Center for International Strategic Studies Southeast Asia* 1, no. 23 (2010), http://csis.org/files/publication/100727_seasia_newslette.pdf.
[11] Bonnie Glaser, "Armed Clash in the South China Sea," Council on Foreign Relations, Contingency Planning Memorandum, Apr 2012. Accessed Oct, 2013. http://www.cfr.org/world/armed-clash-south-china-sea/p27883.

heightened tension surrounding oil and gas exploration forms part of the background for the Vietnamese oil industry.

High Risk Energy Strategy

Petrovietnam, Vietnam's nationalized oil company (NOC), strategy for growth and expansion adds complexity to its operations and increases the risk of an oil and natural gas accident. Foreign partnerships, and potential Chinese intervention in exploration activity, are the primary factors in increasing the risk of an accident. Petrovietnam has implemented a strategy of international partnerships to leverage technology and increase capacity to accelerate and develop Vietnam's petroleum industry.[12] Vietsovpetro, a Russian oil and gas company, is a long standing partner and others include: Gazprom (Russia), Korean National Oil Company (KNOC), Chevron, Petronas (Malaysia), Premier Oil (UK), and Eni (Italy).[13] Together they have grown the number of offshore production fields in the economic engagement zone (EEZ) from five in 2005, to 25 in 2011.[14] While partnerships have increased production capacity, they have also increased the number of drilling platforms, service vessels, and people working in a dangerous environment. Adding more oil and natural gas operations in the EEZ increases the risk for human error and an accident. The increased number of vessels also increases the potential for interaction with Chinese maritime forces.

To mitigate Chinese intervention, Vietnamese strategy relies on the political power of their foreign partnerships in the oil industry. To date, Petrovietnam's partnerships with NOCs have been effective at limiting Chinese intervention. Two recent incidents demonstrate how

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[12] Petrovietnam Vietnam Oil and Gas Group, *Annual Report 2010*, http://english.pvn.vn/?portal=news&page=detail&category_id=126&id=367018. 18.
[13] Business Monitor International, "Vietnam Oil & Gas, Industry Forecast Q4 2013," 09 Aug 2013.
[14] Petrovietnam Vietnam Oil and Gas Group, *Annual Report 2011*, http://english.pvn.vn/?portal=news&page=detail&category_id=126&id=367018. 17.

Vietnam handled Chinese intervention. In October 2012, the China National Oil Corporation (CNOOC) solicited bids on an area in the South China Sea that was in Vietnam's EEZ.[15] Petrovietnam and government officials immediately protested, and China retracted the offer. A second example was in July 2013, when Vietnam's Foreign Minister Pham Binh Minh said in New Delhi that India can conduct oil and gas exploration in Vietnam's EEZ.[16] China reacted to this strategy warning companies not to conduct operations in the disputed area.[17] The political partnerships effectively draw the NOC's parent country into the South China Sea debate and help Vietnam lower the risk of Chinese intervention. While this strategy lowers the risk of intervention, it highlights the loose jurisdictional and regulatory framework that the oil industry works in and increases the risk of an accident.[18]

Petrovietnam addresses risk and safety in their 2010 and 2011 annual reports and provides some insight to the corporation's approach. The 2010 report includes a detailed safety plan that addresses existing safety hazards and leaks from Vietsovpetro operations, designates a Vice President responsible for safety, and outlines compliance with regulations. It also mentions unexpected inspections as an oversight method. In the 2011 report, the message is reduced to a series of pledges and concludes, "Petrovietnam also hopes that its system of managing its

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[15] Veitnam News, "PeteroVietman protests over China's oil grab," *Vietnamnews, The National English Language Daily*, 28 June 2012, accessed 22 October 2013, http://vietnamnews.vn/politics-laws/226720/petrovietnam-protests-over-chinas-oil-grab.html

[16] Salmon Khurshid, "India has right to explore oil in Vietnam EEZ in South China Sea: Binh Minh," *The Economic Times*, 11 July 2013, accessed 28 October 2013, http://articles.economictimes.indiatimes.com/2013-07-11/news/40514997_1_south-china-sea-oil-exploration-salman-khurshid

[17] Nick Heath, Rakteem Katakey, Guo Aibing, "Oil Riches Languish on China's Doorstep," 11 November 2011, *Bloomberg*, accessed 31 October 2013, http://www.bloomberg.com/news/2011-11-10/oil-riches-languish-on-china-doorstep-as-clashes-delay-drilling.html.

[18] Lee Cordner, *Offshore Oil and Gas Safety and Security in the Asia Pacific: The Need for Regional Approaches to Managing Risks* (Singapore: S. Rajaratnam School of International Studies, 2013), 69.

partners' safety...will be in the interest of the community and of each side."[19] A more detailed analysis is required to evaluate Petrovietnam's safety climate, but the annual report states they are "hoping" for safety. Petrovietam's strategy and operating environment elevates the risk of an industrial accident. US engagement on risk assessment is a method to decrease the likelihood, and potential severity, of an industrial accident.

US Engagement Builds Capability

US engagement with Vietnam on the prevention and response to oil spills could reduce the economic impact of future spills and augment existing procedures and systems. An industrial disaster in Vietnam's EEZ would have a significant national economic impact because of the effect on the coastal economy and disruption in crude oil supply. The World Bank estimates that, at the local level, 70 percent of the Vietnamese population is vulnerable to coastal disasters.[20] The destruction of the ecosystem would have an immediate impact on the population who depend on agriculture and fishing. Tourism would be impacted as well. In addition to the environmental damage, an oil spill can disrupt crude oil transfers from offshore platforms to refineries. If crude oil supply from the EEZ ceases to support local refineries, Vietnam's domestic energy fuel prices would climb and impact the larger economy.[21] Vietnam, in recognition of the increased oil production and transport through the region, took a proactive approach to oil spill prevention.

With increased oil and natural gas exploration in the EEZ, and more petroleum shipments, Vietnam foresaw an increased risk of oil spills. In 2001, the government approved a

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[19] Petrovietnam Vietnam Oil and Gas Group, *Annual Report 2011*, 29.

[20] The World Bank, "Vietnam: Disaster Risk Management Project," 8 April 2013, accessed on 31 October 2013. http://www.worldbank.org/en/results/2013/04/09/vietnam-disaster-risk-management-project.

[21] Thomas C. Schelling, *Thinking Through The Energy Problem*, New York: Committee on Economic Development, 1979.

comprehensive plan that focused on six key areas of spill response planning: legislation, Oil Spill Contingency Plans (OSCP), forces of implementation, equipment, training and exercise.[22] Vietnam's plan was backed by legislation and resources and included three response centers, from north to south along the coast, for reporting. The plan divided responsibility into three levels: local, provincial and national. Resources were dedicated to procuring equipment and supplies for cleanup. Also, funding was dedicated to spill compensation programs.[23]

The comprehensive plan was tested in January 2007, when oil slicks appeared in several different areas in central Vietnam. For the next six months, oil came ashore in 20 provinces extending as far south as Ca Mau Cape at the southern reach of Vietnam.[24] The Vietnamese government directed multiple agencies to respond to the spill and to determine the source of the oil. Oil analysis was conducted in Korean and US laboratories, but the source of the spill was never publicly identified. Despite the proactive approach to prevention in 2001, environmentalists were disappointed in the strength and capability of the OSCP. [25] US engagement from DH lessons learned could augment Vietnam's existing OSCP.

Experience from the DH environmental disaster gives the US significant credibility on the subject of oil spill response and prevention. Engaging with the Vietnamese on the recommendations from the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling builds trust and improves their response capability. The Commission concluded that the cause of the accident "can be traced to a series of identifiable mistakes...that

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[22] The East Asian Seas Congress, "Partnerships at Work: Local Implementation and Good Practices," 27 November 2009, http://pemsea.org/eascongress/section-support-files/EAS-WP2010-08.pdf. 5.
[23] Ibid., 6.
[24] Hunyh Duc Nguyen, "Oil Spills in Vietnam- Facts and Challenges," *International Oil Spill Conference Proceedings* 2008, no. 1 (May 2008). doi: http://dx.doi.org/10.7901/2169-3358-2008-1-65.
[25] Ibid., 67.

reveal such systematic failures in risk management that they place in doubt the safety culture of the entire industry."[26] Oil companies manage pressure to reduce cost, improve productivity, and maintain a safe work environment in many different manners. The commission analyzed British Petroleum's (BP) safety record and previous incidents in offshore production in the North Sea, a Prudhoe Bay pipeline leak, and a Texas refinery explosion.[27] Outdated and poorly maintained equipment were common factors in all of the accidents.[28] They concluded that BPs safety and environmental policies were focused on the individual and not at the operational level.[29] The report states that BPs safety culture "failed" and triggered a chain of events that lead to the accident. The DH event has many areas to focus engagement on, from industry failures to inadequate government regulation.

The Commission concluded that the "technology, laws, and regulations, and practices for containing, responding to, and cleaning up spills lag behind the real risks associated with deepwater drilling into large, high-pressure reservoirs of oil and gas."[30] The US executed its National Contingency Plan (NCP) in response to this accident and learned some valuable lessons about agency coordination, oil clean up capability and technology. The United States Coast Guard (USCG) lead the response team comprised of the National Oceanic and Atmospheric Administration (NOAA), the Minerals Management Service (MMS), the Environmental Protection Agency (EPA) and 15 other agencies. Together with BP, they developed plans to close the deep sea well and recover the oil on the surface. Surface recovery skimmers were

[26] National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Report to the President, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling*," (Washington, DC: Janurary 2011) www.oilspillcommission.gov, vi.
[27] Ibid., 219
[28] Ibid., 222
[29] Ibid., 219
[30] Ibid., vii

quickly overwhelmed by the 60,000 barrels of oil a day leaking from the well.[31] To break down the oil, dispersant chemicals were used in volumes and methods not imagined prior to this. During the 1989 Exonn Valdez cleanup, response teams used 5,500 gallons of chemical dispersant, for DH response they used 1.8 million gallons, with 42 percent of it being released below the surface.[32] Reviewing the challenges of implementing the NSC, and the use dispersants, are areas for engagement with Vietnam.

The Commission recommended measures for improving government oversight, funding, and long term monitoring of the coastal areas impacted by the spill. These recommendations cover a wide range of USG agencies that could engage with Vietnam unilaterally, outside of USPACOM engagement. For instance, the US EPA has a counterpart in Vietnam and could engage Vietnam outside of USPACOM. While this is true, the USCG is the lead agency executing the NSC and should coordinate engagement with Vietnam, and other countries on this issue. Also, USCG engagement is a part of the 2011 Memorandum of Understanding on Advancing Bilateral Defense Cooperation between Vietnam and the US. USCG engagement on oil spill prevention and response is a logical continuation of the 2011 MOU, and the NCP, is a method to coordinate expanded engagement with other agencies. USCG leadership of multi-agency engagement, focused on NCP lessons learned, builds Vietnam's response capability across many areas.

Engagement with Vietnam should create partnerships in the military, government, and industry that deal with oil spill prevention and response. Building Vietnam's prevention and

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[31] Ibid., 146

[32] Artin Laleian, Thomas Azwell, "The Tradeoffs of Chemical Dispersant Use in Marine Oil Spills," Deepwater Horizon Study Group Working Paper, January 2011, accessed 29 October 2013, http://ccrm.berkeley.edu/pdfs_papers/DHSGWorkingPapersFeb16-2011/Tradeoffs%20ChemicalDispersantUseMarineOilSpills-AL_TA_DHSG-Jan2011.pdf

response capacity minimizes the risk of an environmental disaster and promotes stability. Opportunities for hosting information and technology exchanges in the US should be examined as well as engagements in Vietnam. One opportunity in the US is next May, when the US is hosting the International Oil Spill Conference (IOSC) in Savannah, GA. This government and industry trade show meets annually, and rotates locations and coordinating organizations between Interspill in Europe, to Spillcon in Australia, and then the US for IOSC.[33] Hosting a Vietnamese delegation would offer opportunities to explain and demonstrate the US response network, interagency coordination, and demonstrate new technology. Future engagement with Vietnam needs to focus on training, technology implementation, and testing response infrastructures at all levels across multiple agencies. Information should be exchanged in regards to environmental monitoring, and ecosystem recovery, after oil spills to maximize best practices to reclaim damaged property. The partnership, and methodology, explained above can be used as a model for engaging other countries in the region to develop a regional approach to the issue.

A Regional Approach Increases Stability

An oil spill in the South China Sea on the scale of the Deepwater Horizon (DH) incident in the Gulf of Mexico could increase tension in the region and lead to instability. Regional and national response mechanisms to oil spills in South East Asia are not fully developed, lack regional reporting mechanisms, response protocols, and the resources, to respond to a spill of that magnitude.[34] In the past, spill reporting has been slow, or non-existent, which increases response time and decreases opportunities for containment, breaks down trust, and makes accountability and reparations difficult. In Bohai Bay, China, CNOOC had a series of spills that

[33] International Oil Spill Conference Proceeedings, http://ioscproceedings.org.
[34] Lee Cordner, *Offshore Oil and Gas Safety and Security in the Asia Pacific*, 90.

were not reported publicly for over a month.[35] Whether a spill is reported or not, currents in the South China Sea will make containment difficult and eventually oil would impact adjacent nations fishing areas and impact coastal areas.[36] An unreported, uncontained spill contaminating neighboring fishing areas and coastal regions would add to an already contentious situation, and make territorial dispute resolution more difficult. Strengthening regional response mechanisms and improving oil and gas exploration safety are common national interests and build trust.

Regional leadership is fundamental to prevention, preparation, and response through standardization, risk assessment, coordination, and training. The South China Sea does not have an active regional coordination framework for oil spill response. Industry will often have projects in multiple jurisdictions and benefits from standardized regulations and procedures. Regional standardization supports industry safety. A regional approach can analyze risk by conducting a comprehensive risk analysis from multiple perspectives to determine vulnerabilities. Gaining perspectives on the region from industry and government can help to develop effective standard operating procedures and determine where shortfalls in capabilities are.[37] Regional leadership, coordination, and planning, can minimize issues with cross border support by developing protocols and procedures, and exercising them in non-crises situations.

[35] He Yong, "China Needs Zero Tolerance for Concealing Major Accidents," *People's Daily Online*, 8 July 2011, accessed 25 October 2013, http://english.peopledaily.com.cn/90001/90780/7433972.html

[36] Haijun Yang, "A General Circulation Model study of the Dynamics of the Upper Ocean Circulation of the South China Sea," *Journal of Geophysical Research* 107, no. C7 (2002) 22-1. http://www.atmos.pku.edu.cn/subpage-files/teachers/yanghj.files/scs_jgr02.pdf

[37] Lee Cordner, *Offshore Oil and Gas Safety and Security in the Asia Pacific*.

Other areas of the globe, in conjunction with industry, have developed a tiered approach to oil spill prevention and response which helps develop and manage response plans at all levels.[38]

ASEAN is the appropriate regional forum to develop, implement, and direct regional oil spill prevention. Initiatives like the ASEAN Oil Spill and Response Action Plan (ASEAN-OSRAP), which was developed in 1993, and signed by Brunei, Darussalam, Indonesia, Malaysia, Philippines, Thailand, and Singapore, have not been effective. The United Nations through the International Maritime Organization (IMO) has filled the regional role in the absence of ASEAN action. Currently, the IMO, in conjunction with the industry group International Petroleum Industry Environmental Conservation Association (IPIECA), have started a Global Initiative for South East Asia (GI-SEA), "to improve oil spill preparedness and response capabilities."[39] The GI-SEA will fill several regional functions such as building "collaboration and create a forum for joint action, focusing on practical activities such as training, workshops and joint exercises." This endeavor will support ASEAN-OSRAP to build regional capabilities and agreements that are found in other parts of the world.

Regional agreements have their limitations. At the time of the DH the US accepted assistance from foreign governments but in most cases, declined support because of incompatible equipment or extensive transit time.[40] Delays in support are common in response efforts because it takes time to coordinate and transit before it is effective. While this delay in support is not ideal, it is not a reason to forego regional coordination. The Caribbean Oil Contingency

[38] The East Asian Seas Congress, "Partnerships at Work: Local Implementation and Good Practices," 27 November 2009, http://pemsea.org/eascongress/section-support-files/EAS-WP2010-08.pdf. 5.
[39] Industrial Marine Power, "IMO, IPIECA Launch Gi-SEA Programme on Oil Spill Preparedness and Response," 25 March 2013, accessed October 26, 2013, http://www.industrialmarinepower.com/-3-3309-imo-ipieca-launch-gisea-programme-o.
[40] National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 142.

Response Plan (OCRP) is a potential example for regional coordination. The intent of the Caribbean plan is to "provide a cooperative scheme for mutual assistance from member States, Territories, and organizations in the event of a major oil spill incident which exceeds the response capability of a national government or oil industry."[41] This plan is sponsored by the IMO and the United Nations Environmental Program (UNEP). The support from other nations is a reason for regional coordination, but the real value is from the response training.[42] The Dominican Republic for instance, has been receiving training at the various levels in oil spill planning and response since 1998.[43] A regional agreement like Caribbean's could apply to the South China Sea and is a template for ASEAN to follow.[44]

The timing is right for the US to engage on this issue. With tension increasing, developing any common dialogue, or solution, surrounding offshore oil and natural gas operations is significant. Oil spill prevention and response is an issue that multiple parties have an interest in and can benefit from a solution. The US does not have to take the lead. China is party to the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 1990). This is a foundational UN convention on oil spill response, preparation, and reporting. It requires states to develop emergency pollution plans for vessels, offshore drilling units, and create regional and national response systems for reporting and responding to oil spills. It mandates that parties render assistance to other nations during pollution emergencies

[41] United Nations International Maritime Organization, "Caribbean Island OPRC Plan," accessed on 31 October 2013, http://cep.unep.org/racrempeitc/regional-oprc-plans/caribbean-island-oprc-plan.
[42] Ibid.
[43] United Nations International Maritime Organization, "Country Profiles," accessed on 31 October 2013, http://cep.unep.org/racrempeitc/National%20OPRC%20Plans/dominican_republic
[44] United Nations International Maritime Organization, *Caribbean Island OPRC Plan 2012*, accessed 31 October 2013, http://cep.unep.org/racrempeitc/regional-oprc-plans/caribbean-island-oprc-plan-2009/view.1.

with guidance on reimbursement for such action.[45] China has also learned from the Bohai Bay oil spill and in 2012, published detailed lessons learned that called for an improved national response system and government coordination. Engaging in oil spill response and preparation is a method to engage Vietnam, China, and other nations, in the volatile area of oil and natural gas exploration while remaining neutral and transparent.

Conclusion

Vietnam's economy has grown significantly since 1986, when it implemented free market reforms. With that economic growth, Vietnam required increased energy and access to resources. To accomplish this, Vietnam developed the oil and natural gas industry at a rapid pace in an uncertain environment. This strategy, and tension with China, have increased the risk of an industrial accident like the US experienced in the Gulf of Mexico. The US needs to engage Vietnam on oil and natural gas exploration safety. The oil and natural gas industry is inherently dangerous and building Vietnam's response capability helps them protect the environment, the coastal economy, and ensure continued oil production. The US experience in DH, and the Commission's recommendations are a starting point for transparent engagement with Vietnam and other countries in Southeast Asia. The nations surrounding the South China Sea would benefit from a regional agreement on oil spill prevention and response. The UN convention, OPRC 1990, is a starting point. The timing is right for an agreement, and the process would build confidence that solutions can be reached, about oil and natural gas exploration in the South China Sea.

[45] United Nations International Maritime Organization, "International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), accessed 31 October 2013, http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-on-Oil-Pollution-Preparedness,-Response-and-Co-operation-(OPRC).aspx

Recommandations

The US should host a delegation from Vietnam, at the 2014 International Oil Spill Conference, to review DH lessons learned and to demonstrate new technology. Hosting a Vietnamese delegation at a conference would increase the access that Vietnamese officials have to a wider array of US oil industry representatives and government officials.

The US should engage both ASEAN, and China, and encourage them to adopt regional standards for oil spill prevention and response. Regional standards will increase the speed and capability of first responders and reduce the impact on neighboring states.

Agencies across the US government learned valuable lessons from the DH incident and can contribute to building response capacity in Vietnam. Based on this experience, and US oil response infrastructure, the USCG should lead the engagement with Vietnam with support from the EPA and NOAA.

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